

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number
WO 2004/044158 A2

(51) International Patent Classification⁷: C12N
(21) International Application Number:
PCT/US2003/035734

(74) Agent: HAILE, Lisa, A.; Gray Cary Ware & Friedenrich
LLP, Suite 1100, 4365 Executive Drive, San Diego, CA
92121-2133 (US).

(22) International Filing Date:
10 November 2003 (10.11.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/425,228 8 November 2002 (08.11.2002) US

(84) Designated States (*regional*): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(63) Related by continuation (CON) or continuation-in-part
(CIP) to earlier application:
US 60/425,228 (CIP)
Filed on 8 November 2002 (08.11.2002)

Published:

— without international search report and to be republished
upon receipt of that report

(71) Applicant (*for all designated States except US*): THE
JOHNS HOPKINS UNIVERSITY [US/US]; Licensing
and Technology Development, 100 N. Charles Street, 5th
Floor, Baltimore, MD 21201 (US).

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): CHENG, Linzhao
[US/US]; 5346 Woodlot Road, Columbia, MD 21044
(US).

(54) Title: HUMAN EMBRYONIC STEM CELL CULTURES, AND COMPOSITIONS AND METHODS FOR GROWING
SAME

(57) Abstract: Human pluripotent embryonic stem cell cultures are provided, as are human feeder cells useful for growing the human embryonic stem cells, conditioned medium obtained from cultures of the human feeder cells, and factors derived from the conditioned medium. Also provided are methods of growing human embryonic stem cells in the presence of the human feeder cells, the conditioned medium, the factors derived from the conditioned medium, or a combination thereof. In addition to the human embryonic stem cell cultures grown according to such methods, isolated human embryonic stem cells obtained from such human embryonic stem cell cultures are provided, as are methods of using such isolated cells.

WO 2004/044158 A2